In the Claims

1. (currently amended) An improvement in a method of microfabricating a three dimensional structure in elastomeric material ~~having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and~~ comprising photolithographically fabricating the three dimensional structure in ~~processing~~ the elastomeric material ~~with decreased surface tension~~ using semiconductor fabricating procedures, including plasma sputtering deposition to form masking layers by means of which the structure is photolithographically microfabricated.

2. (currently amended) An improvement in a method of microfabricating elastomeric material having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and photolithographically processing the elastomeric material with decreased surface tension, ~~The improvement of claim 1~~ where decreasing the surface tension of the elastomeric material comprising forming a silicon dioxide layer on the elastomeric material.

3. (currently amended) The improvement of claim 2 where forming a silicon dioxide layer on the elastomeric material comprises sputter depositing ~~deposing~~ silicon dioxide on the elastomeric material.

4. (currently amended) The improvement of claim 2 where sputter depositing ~~deposing~~ silicon dioxide on the elastomeric material comprises sputter depositing ~~deposing~~ silicon dioxide in an argon-oxygen plasma.

5. (currently amended) An improvement in a method of microfabricating elastomeric material having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and photolithographically processing the elastomeric material with decreased surface tension, ~~The improvement of claim 1~~ where decreasing the surface tension of the elastomeric material comprising forming a silicon nitride layer on the elastomeric material.

6. (currently amended) The improvement of claim 5 where forming a silicon nitride layer on the elastomeric material comprises sputter depositing ~~deposing~~ silicon nitride on the elastomeric material.

7. (currently amended) The improvement of claim 6 where sputter depositing ~~deposing~~ silicon nitride on the elastomeric material comprises sputter depositing ~~deposing~~ silicon nitride in an argon-nitrogen plasma.

8. (currently amended) An improvement in a method of microfabricating elastomeric material having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and photolithographically processing the

elastomeric material with decreased surface tension, ~~The improvement of claim 1~~ where decreasing the surface tension of the elastomeric material comprising forming a silicon layer on the elastomeric material.

9. (currently amended) The improvement of claim 8 where forming a silicon layer on the elastomeric material comprises sputter depositing ~~deposing~~ silicon on the elastomeric material.

10. (currently amended) The improvement of claim 9 where sputter depositing ~~deposing~~ silicon on the elastomeric material comprises sputter depositing ~~deposing~~ silicon in an argon plasma.

11. (original) The improvement of claim 2 further comprising forming a silicon nitride layer on the silicon dioxide layer.

12. (currently amended) The improvement of claim 11 where forming a silicon nitride layer comprises sputter depositing ~~deposing~~ silicon nitride on the silicon dioxide layer.

13. (currently amended) The improvement of claim 12 where sputter depositing ~~deposing~~ silicon nitride on the comprises sputter depositing ~~deposing~~ silicon nitride in an argon-nitrogen plasma.

14. (currently amended) The method of claim 1 where decreasing the surface tension of the elastomeric material decreases the surface tension of polydimethylsilicone ~~poydimethylsilicone~~.

15. (currently amended) The method of claim 1 where decreasing the surface tension of the elastomeric material decreases the surface tension of a room temperature vulcanizable (RTV) silicone elastomer (silanodimethyl polydimethylsiloxane).

16. (withdrawn) A method of directionally etching an elastomeric material comprising providing an RF plasma etching system, creating an oxygen plasma in the presence of Freon in the RF plasma etching system, removing silicon tetrafluoride from the RF plasma etching system.

17. (withdrawn) The method of claim 16 where removing silicon tetrafluoride from the RF plasma etching system comprises pumping the silicon tetrafluoride out of the RF plasma etching system.

18. (withdrawn) The method of claim 16 where creating an oxygen plasma in the presence of Freon comprises creating the oxygen plasma in an approximately 90% oxygen and 10% Freon mixture.

19. (withdrawn) The method of claim 16 where removing silicon tetrafluoride from the RF plasma etching system comprises maintaining the oxygen plasma under a partial vacuum of approximately 400 mTorr.

20. (withdrawn) A method of directionally etching an elastomeric material comprising the steps of providing an RF plasma etching system, creating an oxygen plasma in the presence of Freon in the RF plasma etching system, and removing silicon tetrafluoride from the RF plasma etching system.

21. (new) The improvement of claim 1 further comprising directionally etching an elastomeric material comprising providing an RF plasma etching system, creating an oxygen plasma in the presence of Freon in the RF plasma etching system, removing silicon tetrafluoride from the RF plasma etching system.

22. (new) The improvement of claim 21 where removing silicon tetrafluoride from the RF plasma etching system comprises pumping the silicon tetrafluoride out of the RF plasma etching system.

23. (new) The improvement of claim 21 where creating an oxygen plasma in the presence of Freon comprises creating the oxygen plasma in an approximately 90% oxygen and 10% Freon mixture.

24. (new) The improvement of claim 21 where removing silicon tetrafluoride from the RF plasma etching system comprises maintaining the oxygen plasma under a partial vacuum of approximately 400 mTorr.

25. (new) The improvement of claim 1 further comprising directionally etching an elastomeric material comprising the steps of providing an RF plasma etching system, creating an oxygen plasma in the presence of Freon in the RF plasma etching system, and removing silicon tetrafluoride from the RF plasma etching system.